

P E R M E A B L E

SAI 2026 PERMEABLE SERIES



[Modern

Durable

Affordable]

PERMEABLE SERIES

Permeable Pavers (Local Stock)

Heavy Sandblasted, Slip Rating P5



Type	Dimension (mm)	UoM	kg/UoM	UoM/pallet	kg/pallet	Note
Paving	400x200x55	SQM	100	14.40	1500	Colour Available: Grey

*Made from recycled materials



SOO (SPECIAL ORDER OVERSEAS)

Permeable Paver (SOO - 8 Weeks Lead Time)

Range of Colors



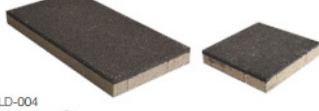
LD-002A



LD-003



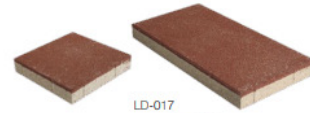
LD-004



LD-006



LD-008B



LD-017



LD-020



LD-022



LD-027



FYS-001



FYS-002



FYS-017



FYS-0031



FYS-0032



FYS-0041



FYS-0042



FYS-0069

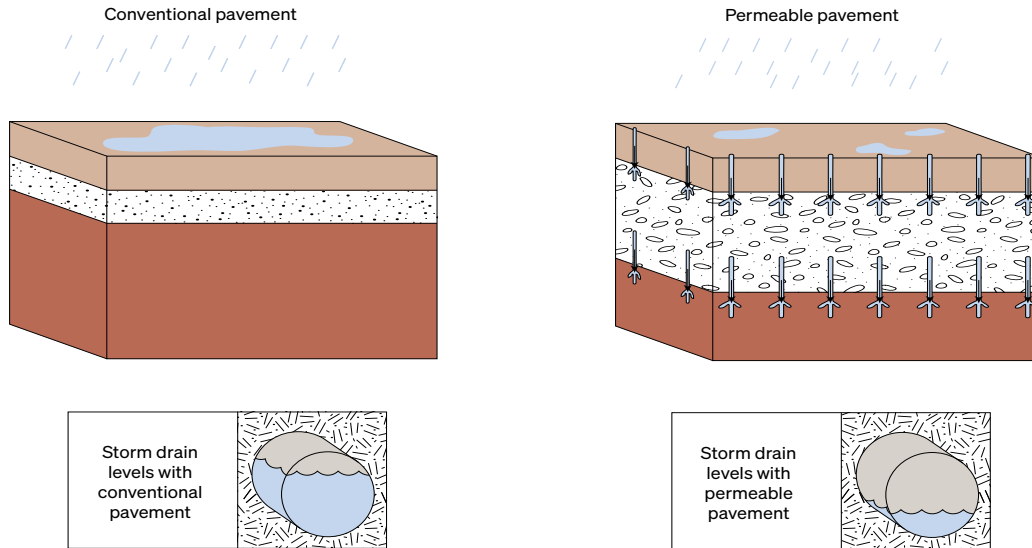


FYS-009



OVERVIEW

The HydraForm permeable paver systems provides an all-in-one hardstand and drainage solution.



The HydraForm system allows rain water to infiltrate through small channels on each of the four sides of the concrete pavers, and flow to the prepared sub-base. The water is then detained, filter treated and dispersed, discharged or directed for re-use.

Rather than collecting water run off, channelling it through open drains and subsequently treating it, water engineers in many parts of the world are solving the problem at the source using permeable paving solutions as a more cost-effective and environmentally productive approach.

Depending on the projects requirements, the permeable pavement can either be designed to allow water to re-enter the natural water table through infiltration, once it has passed through the graded stone sub-base, or be captured, by tanking the sub-base, and reusing the water for irrigation and other applications.

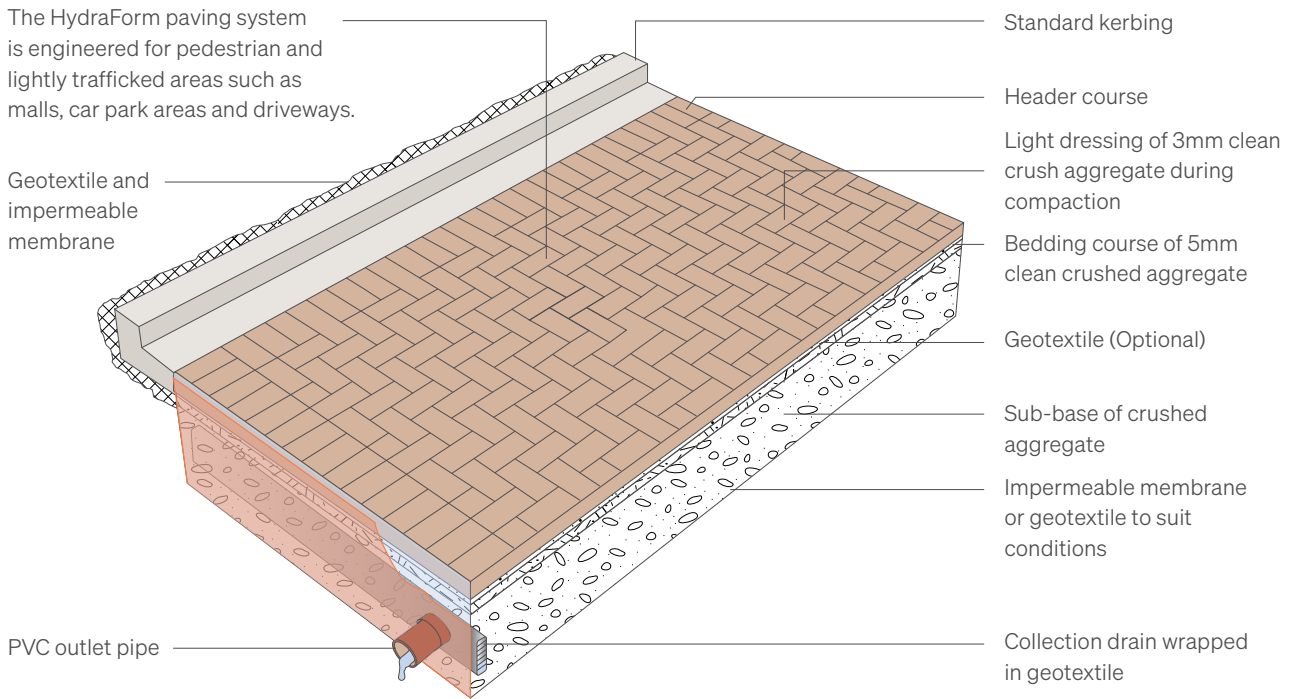
Permeable paving systems can remove contaminants such as heavy metals and hydrocarbons from polluted stormwater run-off. As the water flows through the sub-base of graded aggregate, it gets filtered through microbial action, breaking down contaminants before re-entering the natural environment.

Field studies¹ conducted over the past 20 years of four different types of permeable pavements installed in a parking area found no oil, fuel or lead in the water infiltrated past the pavement sub-base, as they were broken down by microbes within the aggregate layers. This occurred even though these pollutants were present in the direct surface runoff from the impermeable asphalt control sample. Field studies have also shown permeable pavements to be very effective at retaining dissolved metals.

A further study² found that the impervious area on a road surface reduced from 45% to 5% when permeable pavements were used. Subsequent monitoring found that surface runoff water quality improved and there was no increase in groundwater contaminants.

SYSTEM OVERVIEW

System Overview



Cross Section

1.

HydraForm Permeable Pavers

feature nibs on the sides of the pavers to maintain a gap and prevent butt jointing. A light dressing of 3mm diameter clean aggregate should be applied during compaction.

2.

Bedding Course

50mm thick layer of 5mm single size crushed aggregate.

3.

Fabric Filter

Geotextile, standard or heavy grade depending on pavement design.

4.

Base

Typically 100mm thick layer of 5 to 20mm aggregate.

5.

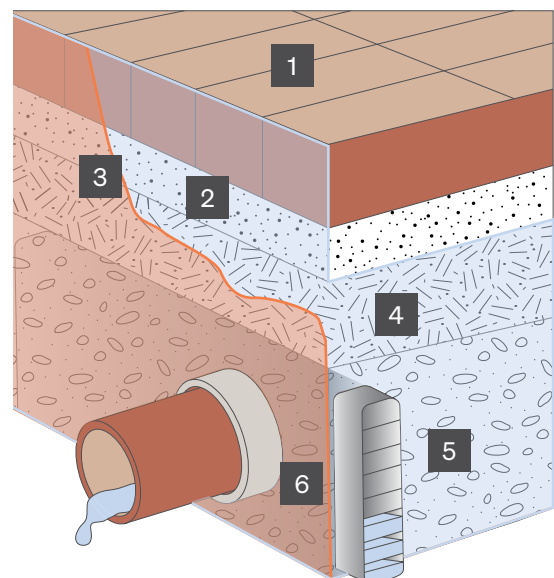
Sub Base

Thickness may be varied depending on pavement design.

6.

Perimeter Membrane

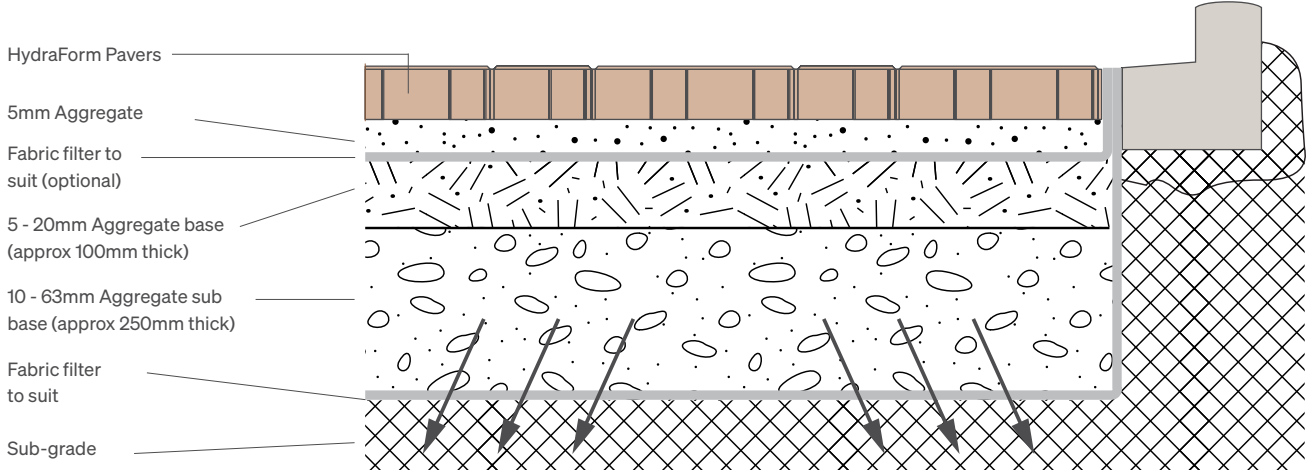
Either impermeable plastic membrane for tanked systems, or permeable Geotextile for infiltration systems.



Infiltration System

Typical Infiltration System Design

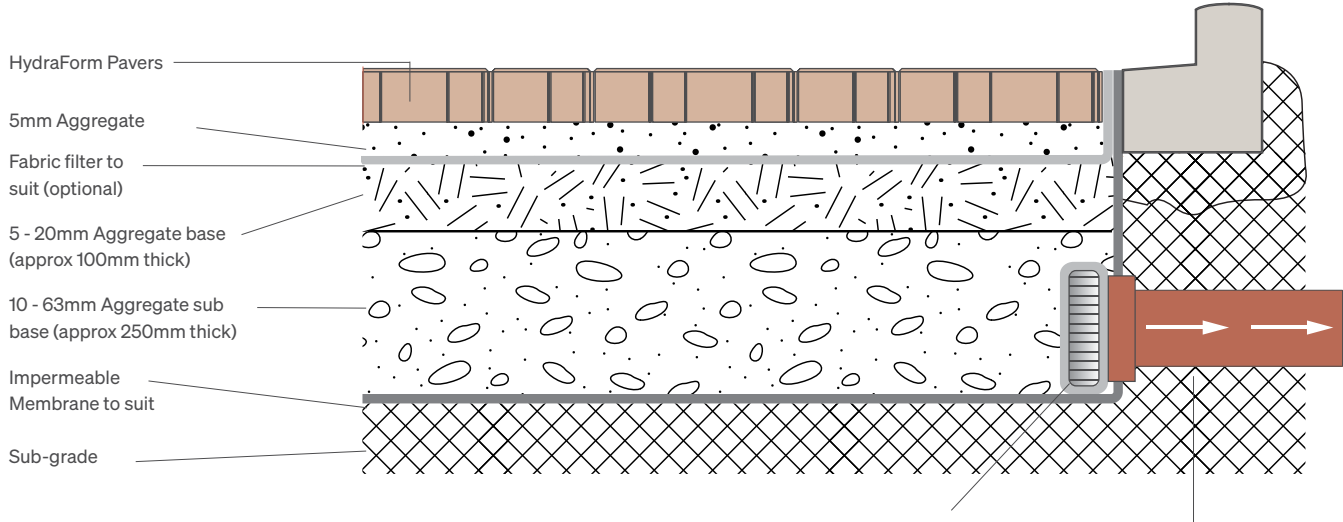
Water is allowed to drain between pavers with filtration through sub-base materials before entering naturally occurring ground water systems.



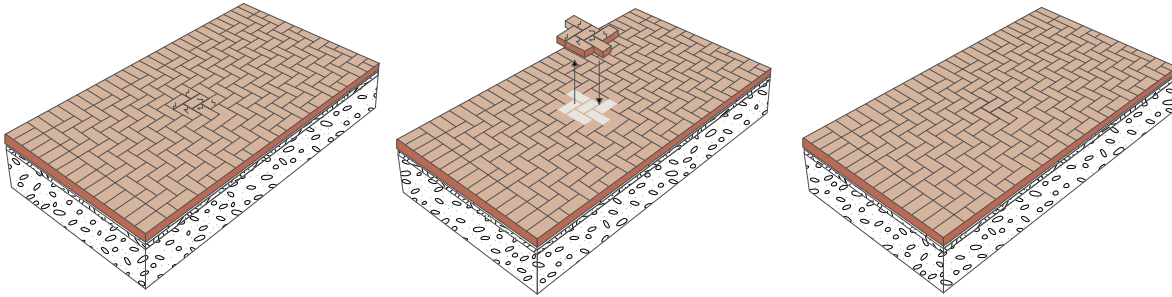
Tanked System

Typical Tanked System Design

Water drains between pavers with filtration through sub-base materials where it is captured within the tanked system (due to the impermeable membrane at the bottom) and then directed through a PVC pipe for storage and reuse.



REMEDIATION



When pavers are cracked

The most common causes of cracked pavers are heavy impact or damage. Pavers are cured prior to delivery so there is minimal shrinkage or contraction of the material. Because there are several small units making up the pavement, with jointing sand in between, a segmental concrete pavement is unlikely to crack due to minor ground movement.

The affected pavers are removed and replaced with new pavers

The pavers can be pulled up from the existing pavement and disposed of. The area where they are taken from should be rebedded and new pavers installed to complement the existing pavement.

The hardstand is restored to its original strength and condition

After remediation, the hardstand is restored to its original strength. Use of a new product does not negatively impact the existing pavers.

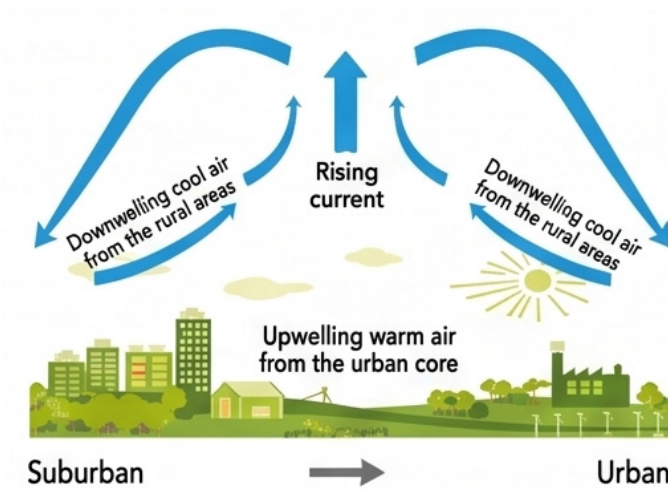
ECOSYSTEM

Heat Island Effect Alleviation Via Water Permeability And Retention

So-called "heat island phenomena" is caused by urbanization, with increased concrete, asphalt, and other sealed surfaces, plus vehicle exhaust and human activity. Temperatures rise and heat stagnates.

In big cities, due to the density of development and lack of green space, water permeability and evaporation are reduced, and combined with rising energy consumption, this creates a viscous cycle of worsening urban environments.

The objective of retaining heat island phenomena and improving the city's living environment involves: (1) reducing the urban surface heat absorption, (2) reducing pavement temperature changes caused by ground cover, and (3) changing the reflective properties of the pavement. For these goals, water retention is the key property of permeable bricks.



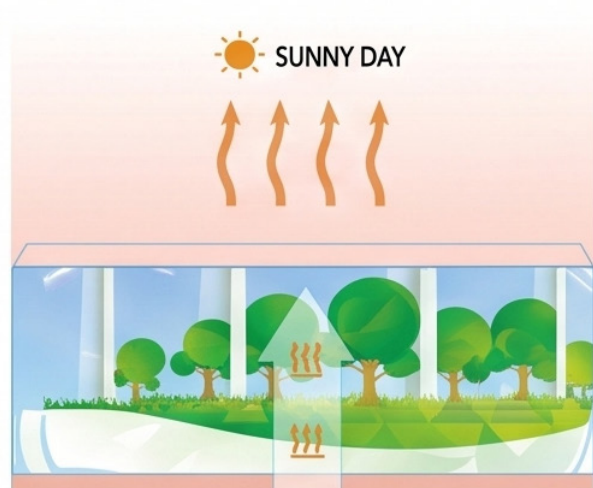
- Improve the ecology of urban vegetation.
- Reduce urban runoff and the load on sewer systems
- Reduce urban runoff and the load on sewer systems.
- Mitigate non-point source pollution in urban waterways.
- Reduce pavement surface temperature on hot days (heat island effect).
- In rainy days, reduce surface slickness to enhance pedestrian safety.
- Increase urban landscape and visual appeal.
- Long-term durability and resistance to wear.
- Provide an environmentally friendly construction solution.

Control Of Heat Island By Ceramic Permeable Bricks

On a sunny day, as opposed to a rain day, the solar radiation is absorbed by the pavement, and as urban surface temperatures rise, this contributes to the heat island effect. Permeable bricks allow for water infiltration and retention, which provides evaporative cooling to mitigate this effect.



Infiltration And Groundwater Recharge



Evaporative Cooling Through Water Retention

TEST SPECIFICATIONS

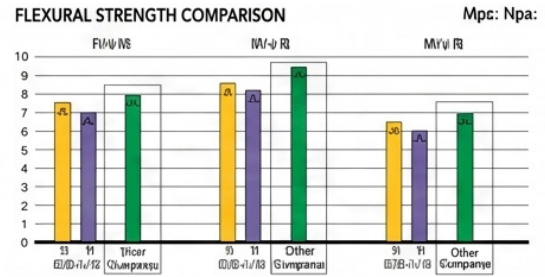
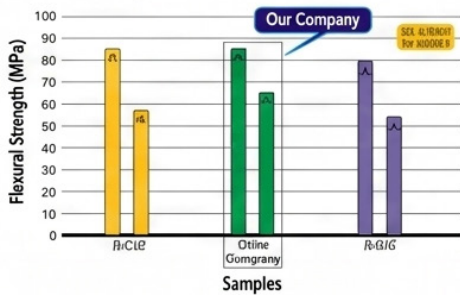
Anti-Slip and Flexural Strength

Non-Slip

For pedestrian safety, Hong Kong's Building Department mandates a minimum slip resistance of 30 BPN on walkways. Our ceramic permeable bricks demonstrate excellent slip resistance, averaging over 60 BPN, ensuring stable foot traffic even when wet.

Flexural Strength

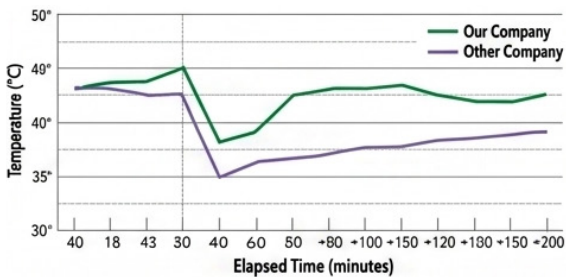
Based on BRP60A testing, the flexural strength of our ceramic permeable bricks shows an average value. Key data points (derived from typical high-performance specifications and the nuttle graphs) ate: Maximum 10 MPa, Minimum 6 MPa, with a specific focus on maintaining superior structural performance compared to standard cement blocks.



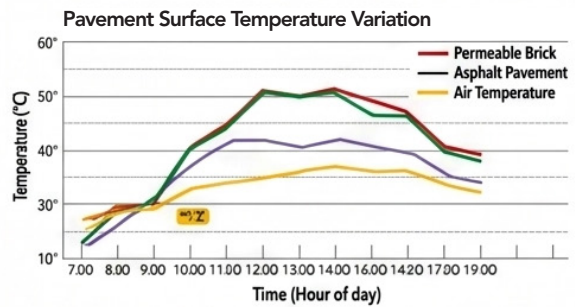
Effect of Water Holding Capacity on Pavement Temperature Reduction

Ceramic permeable brick possesses exceptional water retention. When it rains, water is absorbed. In the summer heat, this water evaporates, significantly lowering the pavement surface temperature, in contrast to asphalt, which can cause temperature to rise.

Effect of Ceramic Permeable Brick on Temperature Reduction



- Average temperature reduction of permeable brick surface compared to asphalt.
- Detailed temperature reduction at different times, as shown by the comparison curves.
- After 15 minutes of water spraying, the surface temperature of permeable brick is significantly lower than asphalt pavement (as seen in graph data).



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TEST SPECIFICATIONS

Quality

Water Permeability Function

Due to rapid penetration, water does not pool on the pavement, ensuring safe pedestrian traffic. Rainwater filters into the ground, supplementing groundwater resources, and can reduce surface runoff and pressure on the drainage system.

Water Retention Function

The porous internal structure is not easily blocked and retains water well. Evaporation from the brick surface helps lower the pavement temperature and mitigate the heat island effect.

Walking And Pedestrian Function

Flat, comfortable, and provides excellent grip. Anti-slip performance makes it suitable for various grades of pedestrian ramps and pathways, from high-traffic areas to parks.

Weather Resistance

Made from high-strength ceramic materials, it is highly durable and resistant to aging, ensuring color and texture last for decades under standard urban exposure.

Characteristic Value Test Table

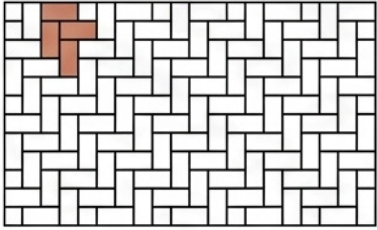
Test Items	Characteristic Value
Flexural Strength (MPa)	≥ 6 MPa
Compressive Strength (MPa)	≥ 45 MPa
Permeability Coefficient (cm/s)	≥ 1.0×10^{-3} cm/s
Skid Resistance (BPN)	(Dry/Wet): 75/60
Wear Resistance (g/cm ²)	≤ 1.0 g/cm ²
Acid and Alkali Resistance	Acid: No significant visual change Alkali: No significant visual change
Frost Resistance	Freeze thaw cycle (N=25): Loss ≤ 1%
Surface Hardness	≥ 8 (Mohs)
Water Holding Capacity (g/cm ²)	≥ 1.0 g/cm ²
Volume Density (g/cm ³)	≥ 1.8 g/cm ³



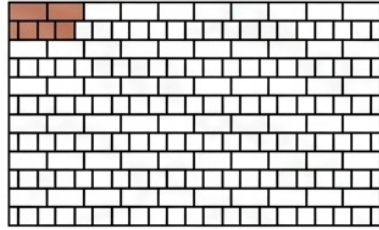
PAVING METHOD

Paving Method

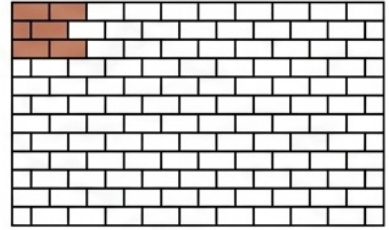
The eclectic approach to wall decals primarily features a variety of sizes, textures, and color combinations, making the decals more vibrant and diverse while showcasing a personalized, eclectic fashion style.



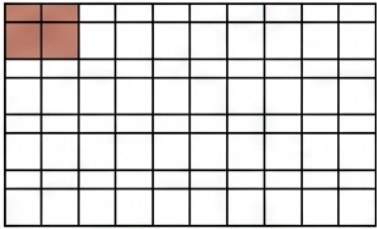
100x100mm, 100x200mm mixed lay



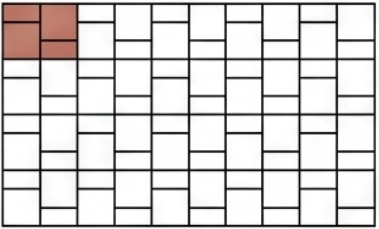
100x100mm, 100x200mm mixed lay



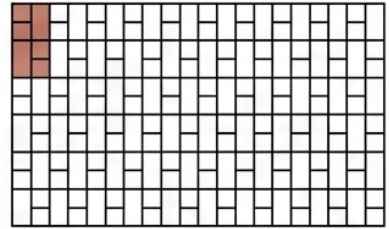
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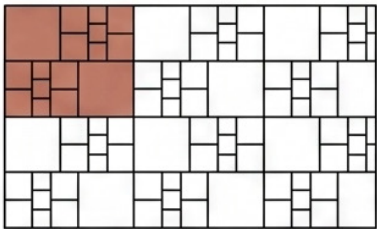
200x200mm mixed lay



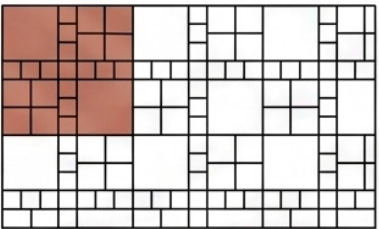
100x100mm, 200x200mm mixed lay



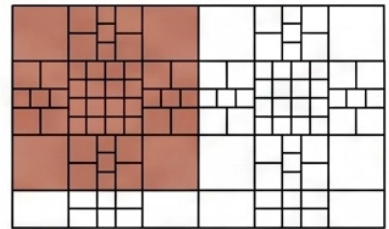
100x100mm, 100x200mm mixed lay



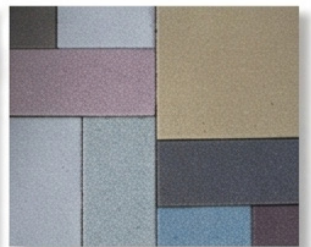
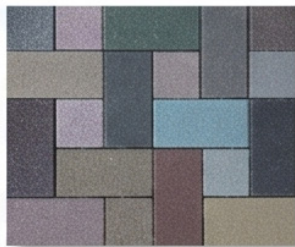
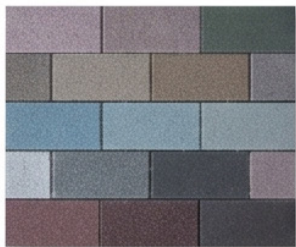
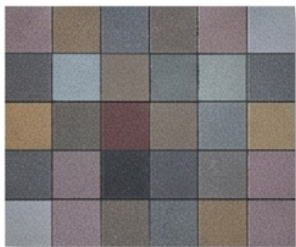
100x100mm, 200x200mm,
100x200mm mixed lay



100x100mm, 200x200mm mixed lay



100x100mm, 100x200mm mixed lay





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